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## “ADDRESSING THE RISE OF FOOD ADULTERATION AS A ‘SILENT THREAT’: HEALTH IMPLICATIONS AND REGULATORY FRAMEWORKS”

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Crossref DOI - <https://doi.org/10.63665/rh.v7i1.16>

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### Abstract :

*Food adulteration has emerged as a silent threat to public health where milk, dairy products, spices, oils, and vegetables are frequently compromised. Adulteration involves the deliberate or negligent addition of harmful substances such as detergents, urea, synthetic dyes, and pesticides. These substances degrade nutritional quality and pose severe health risks including gastrointestinal disorders, kidney failure, respiratory complications, and even cancer. Despite the establishment of the Food Safety and Standards Act (FSSAI) in 2006, profit-driven motives continue to fuel widespread malpractice. The complexity of supply chains and inadequate regulatory oversight further exacerbate the problem, allowing adulterators to remain one step ahead of detection technologies. There are several factors that contribute to the rampant adulteration of food; lack of strict regulations, high demand for cheap food, lack of awareness and education. This research paper examines the drivers of adulteration, ranging from economic incentives and corruption to lack of education and consumer vigilance. It also highlights the consequences for public health and trust in the food system, while reviewing government initiatives aimed at harsh penalties and improved monitoring. Ultimately, combating food adulteration requires stronger enforcement, consumer awareness, and ethical business practices to ensure food safety, protect public health and build a sustainable food system.*

**Keywords :** Adulteration, Health, Common Adulterants, Food, Consumer Awareness

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### Introduction :

Food adulteration has emerged as a critical concern in the Indian food industry. Particularly, the adulteration of milk, spices, and other food items has been observed to be on the rise, posing serious health problems to people. Have you ever been told to scratch an apple with a knife or dip it in hot water before eating? If we see white powder, the apple is coated with synthetic wax.

Adulteration is done by the manufacturers to increase profits and to reduce losses. They try to cover up by adding inferior quality products, but this is not always the case. Adulteration can be categorized under three different categories: It happens due to the presence of certain organic compounds naturally occurring in foods. In the second case,



lower-quality or harmful substances are added to products as a deliberate act on the part of the adulterer with the intention to increase the margin of profit. This is the act of spoiling the quality of food items intentionally. In the third case, adulterants are found due to ignorance, negligence, lack of proper facilities, and unhygienic working conditions.

Food adulteration is a serious problem that is putting many lives at risk. The Delhi High Court expressed shock after an expert committee found high levels of poisonous pesticides in everyday food. The court criticized food safety officials for staying in their 'air-conditioned rooms' instead of checking the streets to stop this 'dangerous menace'. The problem is made worse because our laws are very slow. It can take 10 to 15 years for a court to finish a case. Even then, the person might only go to jail for three years. Many sellers feel that the high profits are worth and the low risk of getting caught. They make money by selling fake food. These people are not afraid of the small punishment.

Adulteration happens in many ways. Even healthy foods like honey are often faked. While some people think honey turning solid crystallizing means it has added sugar, that is actually a natural process. The real cheating happens when suppliers mix honey with cheap corn syrup or 'sugar water' to increase the volume. Some honey from other countries is banned because it contains dangerous antibiotics. To get around this, sellers filter out the evidence and ship it through different countries to change the label.

Many people are now trying to spread awareness about these dangers. For example, popular YouTuber Gaurav Taneja has made videos teaching parents how to check if their milk is safe for their children. Experts suggest that we should be careful of food with 'unnatural colours' as things like vegetables and meat usually keep their natural look even when cooked.

### **Causes of Food Adulteration :**

Several factors contribute to the increasing prevalence of food adulteration in India. Economic incentives, driven by profit motives, prompt unscrupulous food producers and suppliers to engage in adulteration practices. Weak regulatory frameworks, limited enforcement capacity, and a lack of consumer awareness further enable the proliferation of food adulteration. Additionally, complexities in the food supply chain and the presence of middlemen create opportunities for adulteration to occur undetected, posing challenges to ensuring food safety and quality.

Adulteration at the agriculturist level, where farmers and cultivators cannot be checked for pesticides, means that when someone develops a stomach pain after eating a meal, they do not complain; they just avoid the product. Most of you do not have knowledge of what adulteration is.

For any food product or shelf product to sell, you need to generate a demand with competitive pricing and high quality. Taste, quality, and purity of a product will promote usage only after it is tested and labelled visibly.

The government has many organizations that either lack the legal power to take real



action or don't have enough employees to do their jobs. They are blocked by rules that stop them from working across state lines. If the boss doesn't ask for reports or results, the workers don't feel the need to keep the data moving. Because the ruling body doesn't care enough, the information gathered usually just sits on a shelf and is never used to actually finish the job.

Food safety standards should be high everywhere, and they should be implemented strictly. We need a proper system to stop such practices and remove corruption. Then only we will be able to see real change. Instead of waiting for the ruling body to respond and take some action on these wrongdoings, we must take a step further. We should inform the local police station if any adulteration is going on to our knowledge. If they do not respond, we can take help from local media. The Food Safety and Standards Authority of India (FSSAI) and the state-level Food and Drug Administrations (FDA) do not use media to warn consumers. Where would consumers go if they develop any reaction to a packaged product? Many people are not aware of the products on the shelf. Many of them do not know the difference between traditional and simplified products. People tend to keep buying and using without any conscious thinking. We need sustainable living concepts. Local produce cheap products for local use. Packaging and sale are done by locals. In this modern materialistic world, all people run behind money and most probably take the cheaper road. So, we all need to be careful while purchasing. Why not to pay extra money for the trusted items that are examined before packaging? The 100 rupees you want to save for a single item may cost you 1000 rupees spending in hospital. Save your life as well as your family. The problem is widespread and increasing day by day. This is because of less awareness or no awareness.

People often hold protests and rallies when a new movie is released, when their religious sentiments are hurt. We even see people march in protest when a paper leak occurs. However, we rarely see rallies or candlelight vigils for the 'slow murder' of our loved ones caused by unsafe food. We have not put enough pressure on the officials and ruling bodies who are supposed to protect us. While a sudden death makes the front page of the news, the media rarely talks about this slow killing that makes the entire country suffer every single day. Food adulteration is a hidden killer that we are allowing to happen right in front of our eyes. We should ask ourselves whether we are okay with this. We give our children milk that might be mixed with harmful things like urea, caustic soda, and vegetable oil. We buy them cheap ice cream that could contain washing powder and sweets that might have poisonous arsenic.

Who is truly to blame? Is it the person or the society that allowed or failed to prevent it? We rarely hear about raids to catch these people. What are the officials doing in between these rare inspections? Raids should be happening every day or most probably every week. Why are state food Commissioner offices in every state are failing to do this? The strangest part is that even the authorities and politicians eat the same unsafe food, yet nothing changes. Adulteration in food products is the result of greed, corruption, and useless governing systems. It is not a lack of knowledge, prowess, or analytical techniques to find adulteration. It is a lack of enforcement of the laws. Adulterators are always one step ahead of science and technology. Almost all dairy products are contaminated in this contemporary world, even



though studies show a lower percentage of food adulteration. The industry adulteration figures are far higher.

### **Common Food Adulterants :**

We do not really know what is being mixed into our food. Milk is the most commonly adulterated food. It comes first on the list, followed by almost all milk products, sweets, ghee, cereals, spices, pulses, edible oils, black pepper, tea leaves, coffee, honey, etc. Different adulterants have been used for different foods.

Millions of Indians drink milk every single day. Common adulterants found in milk include water, detergent, urea, and formalin. These adulterants not only compromise the nutritional quality of milk but also pose significant health risks to consumers. The adulteration of milk has been linked to various health issues, including gastrointestinal disorders and long-term health complications. It is important to understand their harmful effects on the human body. Detergent in milk can cause gastrointestinal diseases and kidney problems and, in severe cases, even kidney failure. Milk containing urea can worsen respiratory issues. Long-term use of such adulterated milk may even lead to cancer. Giving this kind of milk to children is like inviting serious diseases into their lives. The absence of strict quality control and the involvement of dishonest minds in the dairy supply chain worsen the problem. Studies by India's own Food Safety and Standards Authority of India (FSSAI) have discovered that many milk products are breaking safety rules. The World Health Organization (WHO) even warned the Indian government that if they don't track milk cheating more closely, many people could face serious health problems, including deadly diseases like cancer. These violations are a major threat to public health. Fortunately, there are now several testing kits available that anyone can use to check if milk has been mixed with harmful substances like urea or starch. We should keep testing it from time to time. At the same time, milk collection areas where cows and buffaloes are milked should be checked regularly. These small steps protect us from diseases. Remember, "Prevention is better than cure!"

Paneer is another product consumed in large quantities. Shockingly, synthetic paneer can be produced using harmful chemicals such as urea, coal tar dyes, detergent, and sulphuric acid. Paneer is also adulterated with refined wheat flour (maida). There are simple physical and visual tests that can help detect adulteration in paneer. To stay healthy, you should spend a few minutes checking your paneer because many places produce and sell tons of fake, synthetic paneer. Real paneer has a pleasant smell and milky taste. While adulterated paneer often tastes bitter or smoky or has no flavour at all. You can also know the difference by the texture; real paneer is firm yet soft and stays together when pressed, but fake paneer feels rubbery and will crumble into small pieces when mashed because of ingredients like baking soda. To protect your family, it is better to buy packaged paneer instead of loose blocks, so you can verify the manufacturer's address, batch number, expiry date, and the green vegetarian dot. In addition to milk and paneer, a wide range of other food items are susceptible to adulteration. The widespread adulteration of various food items not only compromises consumer trust but also undermines public health efforts to combat malnutrition



and foodborne illnesses.

It is not possible to detect the adulteration in all products. As there are no fixed standards or yardsticks to measure quality or the colour and the taste. Tea can be adulterated with used tea leaves processed and coloured. Used tea leaves are dried and coloured to look fresh and mixed with fresh tea. Iron fillings and coloured tea leaves are mixed with tea. As it is boiled or brewed, it is commonly adulterated with extremely inferior quality outcomes. There are unscrupulous factories that add colour to make the end product look presentable. Harmful colours are added to confectionery items. These colours are harmful to the body.

Some vegetables, like cauliflower, are bleached with chemicals to make them look bright and white. Other green vegetables, such as pointed gourd (parwal), are coated with artificial green dye to make them look brighter and fresher than they actually are. Many sweets that children eat every day contain harmful artificial colours. These include dangerous chemicals like copper, Prussian blue, arsenic, and chrome yellow. In some cases, copper salts are even used to make vegetables look brighter and greener than they naturally are.

Cooking oils and fats are also frequently mixed with cheaper ingredients. Dishonest sellers often mix expensive oils with low-quality options like palm oil, rice bran oil, or even used waste oil. For example, packets labelled as sunflower, soybean, or groundnut oil sometimes actually contain cheap cottonseed oil.

Because olive oil is popular for its health benefits, it is a major target for fraud. High-quality 'extra-virgin' olive oil is often thinned out with lower-grade oils. In some cases, sellers mix olive oil with canola or colza oil, then use chemicals to remove the smell and add fake colours and flavours to make it look like the real thing.

Spices, known for their distinct flavours and aromas, are also vulnerable to adulteration. Adulterants such as colorants, starch, sawdust, and artificial flavours are frequently added to spices to cut costs and increase profits. The adulteration of spices not only diminishes their quality but also poses health risks due to the presence of harmful substances. Consumers are often unaware of the adulterants present in the spices they purchase, highlighting the need for greater transparency and oversight in the spice industry to ensure food safety.

### **Government Initiatives :**

The Ministry of Health and Family Welfare is in charge of making sure everyone has safe food to eat. In 1954, a law called the Prevention of Food Adulteration Act was created to ensure food is pure and healthy. This law was updated in 1986 to give consumers more power and to make the penalties for breaking the law much tougher.

Recently, the government decided to make these punishments even more harsh. The food safety authority has suggested new changes to the Food Safety and Standards Act. Although this act was first written in 2006, its official rules didn't start until 2011. One of the most important new changes is a specific plan to strictly stop people from adding harmful or fake ingredients to food. The FSSAI has proposed a very strict rule: Anyone who adds



harmful substances to food that could seriously hurt or kill someone will face severe punishment. Even if no one has actually been hurt yet, the person can be sent to prison for at least 7 years or even for life. Additionally, they will have to pay a fine of at least ₹10 lakh.

FSSAI has proposed several new changes to make food laws work better. They want to set up local food safety teams in every state to ensure the rules are followed strictly. They also want to increase the penalties for anyone who interferes with a food safety officer's work, such as lying to them, threatening them, or attacking them. Currently, the punishment is only up to 3 months in jail and a ₹1 lakh fine. The new proposal would increase this to 6 months to 2 years in jail and a fine of up to ₹5 lakh.

### **Conclusion :**

The escalating trend of food adulteration underscores the urgent need for concerted efforts to safeguard consumer health and the integrity of the food supply chain. It is imperative to prioritize food safety, regulatory compliance, and ethical business practices to ensure a sustainable and resilient food system for all in India. Protecting consumer health and rights must be the top priority for the food industry. Companies must work hard to stop food fraud and can no longer make excuses about how difficult it is to detect hidden, harmful ingredients. It is the responsibility of manufacturers to prove that their products are genuine and to show exactly where their ingredients come from. Food safety must be treated as a collective responsibility. Regulators, businesses, and consumers must work together to eliminate adulteration and ensure a resilient food system. Only through coordinated efforts we can safeguard public health, restore trust, and promote sustainable living.

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